Medium-Mu Triode—Sharp-Cutoff Pentode

9-PIN MINIATURE TYPE

For Use in Low-B+ Black-and-White TV Receivers Having Low-Voltage Power Supplies

ELECTRICAL CHARACTERISTICS

Bogey Values[a]

Heater Voltage (AC or DC)	E_h	6.3	V
Heater Current	I_h	0.775	A
Direct Interelectrode Capacitances			
Without external shield			
Triode Unit:			
Grid to plate	c_{g-p}	2.8	pF
Input: G_T to (K_T, $K_P + G_{3P} + IS$, H)	c_i	4.2	pF
Output: P_T to (K_T, $K_P + G_{3P} + IS$, H)	c_o	2.4	pF
Pentode Unit:			
Grid No.1 to plate	c_{g1-p}	0.12 max	pF
Input: G_{1P} to ($K_P + G_{3P} + IS$, G_{2P}, H)	c_i	14	pF
Output: P_P to ($K_P + G_{3P} + IS$, G_{2P}, H)	c_o	4.8	pF
Triode grid to pentode plate	-	0.015 max	pF
Pentode plate to triode plate	-	0.17 max	pF

For the following characteristics, see Conditions

		Triode Unit	Pentode Unit		
Amplification Factor	μ	46	-	-	
Plate Resistance (Approx.)	r_p	4400	55000	75000	Ω
Transconductance	g_m	10400	21000	23000	μmho
DC Plate Current	I_b	15	16.5	20	mA
DC Grid-No.2 Current	I_{c2}	-	3.1	3.5	mA
Cutoff DC Grid-No.1 Voltage Plate μA = 100	$E_{c1(co)}$	-6	-4.2	-4.2	V

Conditions

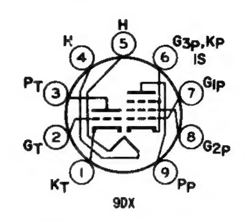
Heater Voltage	E_h	Bogey value			V
DC Plate Supply Voltage	E_{bb}	125	125	200	V
DC Grid-No.2 Supply Voltage	E_{cc2}	-	125	125	V
Grid No.1	-	Connected to negative end of R_k			
Cathode Resistor	R_k	68	82	68	Ω

MECHANICAL CHARACTERISTICS

Operating Position	Any
Type of Cathodes	Coated Unipotential
Maximum Overall Length	2.625 in
Maximum Seated Length	2.375 in
Maximum Diameter	0.875 in
Dimensional Outline	See *General Section*
Envelope	JEDEC T6-1/2
Base	Small-Button Noval 9-Pin (JEDEC E9-1)

TERMINAL DIAGRAM (Bottom View)

Pin 1 – Triode Cathode
Pin 2 – Triode Grid
Pin 3 – Triode Plate
Pin 4 – Heater
Pin 5 – Heater
Pin 6 – Pentode Grid No.3, Pentode Cathode, Internal Shield
Pin 7 – Pentode Grid No.1
Pin 8 – Pentode Grid No.2
Pin 9 – Pentode Plate



DESIGN-MAXIMUM RATINGS

For operation as a Class A1 Amplifier Tube

		Triode Unit	Pentode Unit	
DC Plate Voltage	E_b	300	300	V
DC Grid-No.2 (Screen-Grid) Supply Voltage	E_{cc2}	-	300	V
DC Grid-No.2 Voltage	E_{c2}	-	See *Grid-No.2 Input Rating Chart* at front of Receiving Tube Section	
DC Grid-No.1 (Control-Grid) Voltage				
Positive-bias value	E_{c1}	0	0	V
Heater-Cathode Voltage				
Peak	e_{hkm}	±200		V
Average[b]	$E_{hk(av)}$	100		V
Heater Voltage (AC or DC)	E_h	5.7 to 6.9		V
Grid-No.2 Input	P_{g2}			
For $E_{c2} \leq 150$ V	-	-	1	W
For $E_{c2} \geq 150$ V and ≤ 300 V	-	-	See *Grid-No.2 Input Rating Chart* at front of Receiving Tube Section	
Plate Dissipation	P_b	2	5	W

MAXIMUM CIRCUIT VALUES

		Triode Unit	Pentode Unit	
Grid-No.1 Circuit Resistance	$R_{g1}(ckt)$			
For fixed-bias operation	-	0.5	0.1	MΩ
For cathode-bias operation	-	1	0.25	MΩ

[a] Unless otherwise specified.
[b] Measured with a dc meter.

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Typical Characteristics

Triode Unit

E_h = BOGEY VALUE

PLATE VOLTS (E_b) = 200

125

50

μ

AMPLIFICATION FACTOR (μ)

60 50 40 30

PLATE RESISTANCE (r_p) — MEGOHMS

0.02 0.015 0.01 0.005 0

TRANSCONDUCTANCE (g_m) — MICROMHOS

15000 10000 5000 0

E_b = 200 r_p 125 r_p 50 r_p

E_b = 200 g_m 125 g_m 50 g_m

-6 -5 -4 -3 -2 -1 0

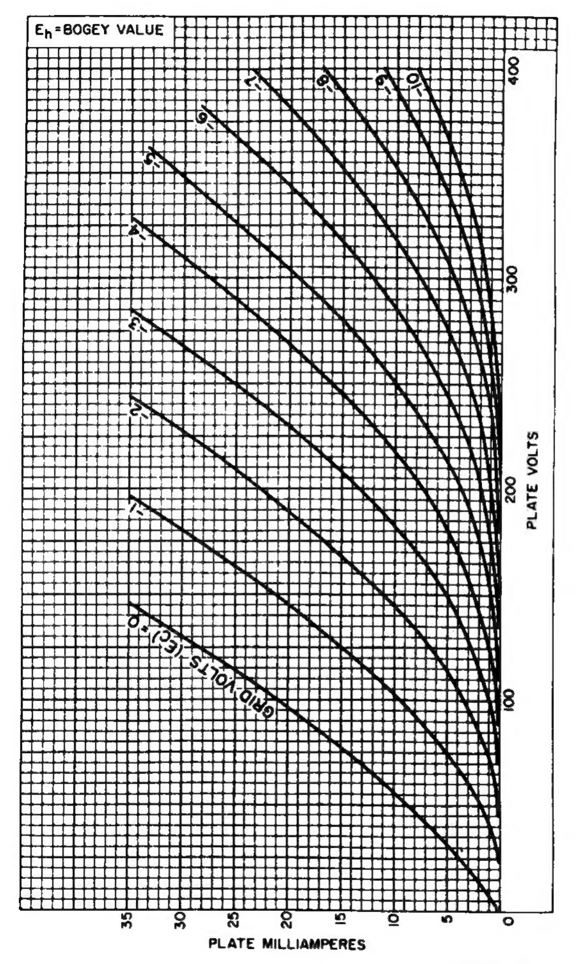
GRID VOLTS

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Typical Plate Characteristics

Triode Unit

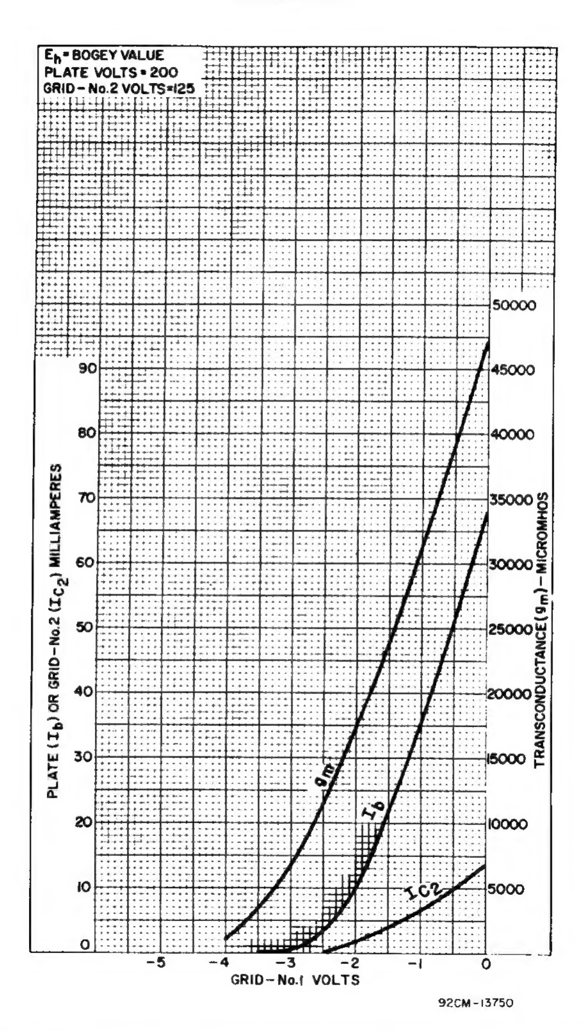


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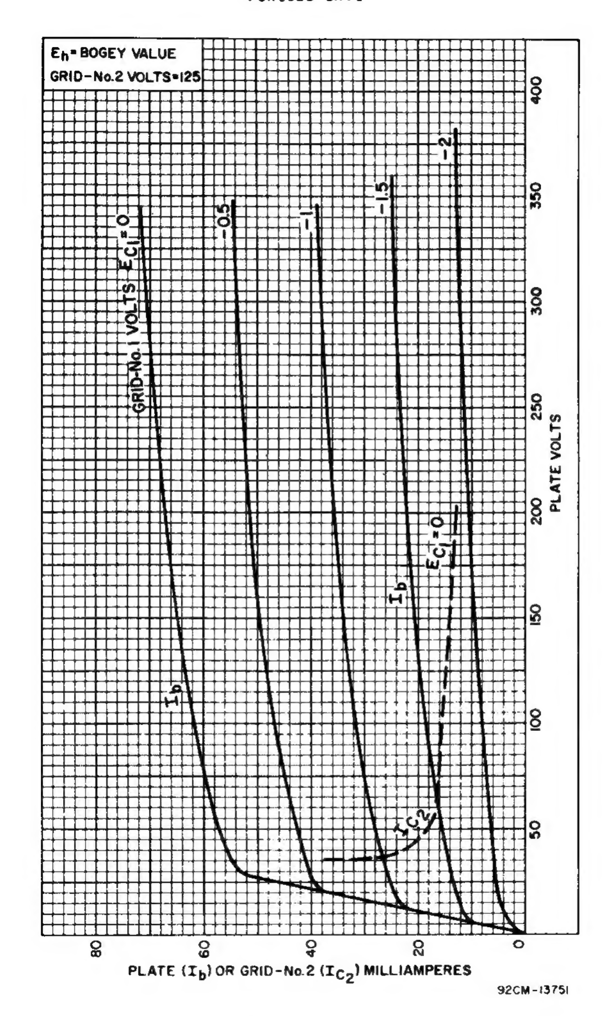
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Typical Characteristics

Pentode Unit



Typical Plate Characteristics
Pentode Unit



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